



FOSTER WHEELER ENVIRONMENTAL CORPORATION

December 22, 1997
File #: 1284-0018-97-0983

Commanding Officer
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop #82
Lester, PA 19113
Attn.: Code 4023 (S. Lehman)

Subject: US NAVY CONTRACT NO. N62472-94-D-0398
DELIVERY ORDER NO. 0018-06, NAWC WARMINSTER, PA
November, 1997 GROUNDWATER PUMP & TREAT SYSTEM MONTHLY REPORT

Dear Mr. Lehman:

This letter report provides the results of the November, 1997 sampling and the activities performed during the reporting period from November 1, 1997 through November 30, 1997. The groundwater treatment plant operated 99.7% of the reporting period.

As of November 30, 1997 (2400 hours) a total of 874,554 gallons of groundwater had been treated during the period from November 1, 1997 through November 30, 1997. This brings the total amount of water treated to 23,199,875 gallons (November 30, 1997). During November, 1997 the average effluent flowrate was 20.3 gpm.

The process water was sampled on November 19, 1997, the results of this sampling are presented in the attached table. This data shows that no discharge limits were exceeded during the November, 1997 reporting period.

There was no alarm/system induced shutdown during the reporting period.

There was one operator induced shutdown during the reporting period:

1. November 5, 1997 - 1005 to 1114 - CMCS disk cleaning and defragmentation of files

The following maintenance was performed on the groundwater treatment system during November, 1997:

1. Re-installed Area "a" flowmeter.
2. Completed tank labeling.
3. Ran all chemical feed systems with water. (Chemicals are currently not being used in the treatment system).
4. Ran sludge transfer pumps.

The Tetrachloroethene concentration in the groundwater influent to the system was 4 ug/l, with a total of 0.029 pounds of Tetrachloroethene removed during the November, 1997 reporting period. The total amount of Tetrachloroethene removed through November 30, 1997 is 2.062 pounds.

Calculation:
Average PCE concentration = 4 ug/l
Average water flowrate for month of November, 1997 = 20.3 gpm
Pounds of PCE removed = (20.3 gpm)(43200 min)(4 ug/l)(3.785 l/gal) (1 g / 1,000,000 ug)(1 lb / 454 g) = 0.029 pounds of PCE

The scheduled dates which Foster Wheeler Environmental's operator will be on-site during the month of January, 1997 are presented in the attached schedule.

If you should have any questions or comments regarding the November, 1997 reporting period, please feel free to contact either me at 215-702-4007 or Dave DiCesare at 215-702-4074.

Sincerely,



Carl Dannenberger, CHMM
Project Manager



David J. DiCesare
Project Engineer

cc: L. Monaco (USEPA)
T. Ames (CSO)
N. Crickman (PADEP)
M. Hunter (CSO)
E. Beatty (ROICC)
D. Kennedy (PADEP)
D. Ostrauskas (USEPA)
A. Wills (Bucks Co. Dept. of Health)
D. Fennimore (Earth Data Inc.)
A. Holcomb (FWENC)
File



**Foster Wheeler Environmental Corporation
NAWC, Warminster Groundwater Pump and Treatment Plant
Operator Schedule for January, 1997**

**Monday, January 5, 1997
Wednesday, January 7, 1997
Monday, January 12, 1997
Wednesday, January 14, 1997
Monday, January 19, 1997
Wednesday, January 21, 1997
Monday, January 26, 1997
Wednesday, January 28, 1997**



FOSTER WHEELER ENVIRONMENTAL CORPORATION
NAWC, WARMINSTER - GROUNDWATER PUMP AND TREAT PLANT
SAMPLING RESULTS - NOVEMBER, 1997

FWENC - Sample ID		DO-0018-06-001	DO-0018-06-002	DO-0018-06-003	DO-0018-06-004	DO-0018-06-005	DO-0018-06-006	DO-0018-06-007	
Sample Location		Area C Influent	Equalization Tank Effluent	Inclined Plate Separator Effluent	Sand Filter Effluent	Air Stripper Effluent	Lead Carbon Unit Effluent	Treatment Plant Effluent	Discharge Limits
Sample Date	Method	19-Nov-97	19-Nov-97	19-Nov-97	19-Nov-97	19-Nov-97	19-Nov-97	19-Nov-97	Instantaneous Maximum
Total Discharge (gal.) thru 11/30/97									874,554
Average Discharge Flowrate (gpm) for November, 1997									20.3
pH	EPA 150.1	7.3	7.6	N/A	7.6	N/A	N/A	7.5	6.0-9.0
Total Suspended Solids (mg/l)	EPA 160.2	6	<1	1	1	N/A	N/A	<1	75 mg/l
Total Organic Carbon (mg/l)	415.1/EPA600	N/A	BDL	N/A	N/A	N/A	BDL	BDL	-
Carbon Tetrachloride	EPA 8260A	N/A	BDL	N/A	N/A	BDL	BDL	BDL	4.2 ug/l
Tetrachloroethene	EPA 8260A	N/A	4	N/A	N/A	BDL	BDL	BDL	10.0 ug/l
Trichloroethene	EPA 8260A	N/A	BDL	N/A	N/A	BDL	BDL	BDL	42.5 ug/l
Vinyl Chloride	EPA 8260A	N/A	BDL	N/A	N/A	BDL	BDL	BDL	0.27 ug/l
1,1-Dichloroethene	EPA 8260A	N/A	BDL	N/A	N/A	BDL	BDL	BDL	0.85 ug/l
Cadmium	SW846	N/A	BDL	N/A	BDL	N/A	N/A	BDL	4.0 ug/l
Copper	SW846	N/A	BDL	N/A	BDL	N/A	N/A	BDL	24.0 ug/l
Lead	SW846	N/A	BDL	N/A	BDL	N/A	N/A	BDL	11.0 ug/l
Zinc	SW846	N/A	34.2	N/A	43.1	N/A	N/A	20.3	157 ug/l
Arsenic	SW846	N/A	BDL	N/A	BDL	N/A	N/A	BDL	0.27 ug/l
Aluminum	SW846	N/A	BDL	N/A	BDL	N/A	N/A	BDL	1875 ug/l
Total Iron	SW846	N/A	182	N/A	BDL	N/A	N/A	109	3600 ug/l
Total Manganese	SW846	N/A	BDL	N/A	BDL	N/A	N/A	BDL	3750 ug/l
Mercury	SW846	N/A	BDL	N/A	BDL	N/A	N/A	BDL	0.045 ug/l
Total Cyanide (mg/l)	SW846 9010	N/A	<0.02	N/A	<0.02	N/A	N/A	<0.02	-
Chromium (+6) - (mg/l)	SW846 7196	N/A	<0.01	N/A	<0.01	N/A	N/A	<0.01	23.2 ug/l

NOTES:

1 - All concentrations are in ug/l unless otherwise noted.
N/A - indicates compound was not analyzed for.
BDL - Below Detection Limits